UNIVERSITY OF TAMPERE

COMPUTER-MEDIATED COMMUNICATION IN FOREIGN LANGUAGE LEARNING:

Case study on the CityCompass application

Faculty of Communication Sciences

Master's thesis in Media Education

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TABLE OF CONTENT

APPENDICES

Appendix 1 Background information form

Appendix 2 Consent form

Appendix 3 The CityCompass evaluation form

Appendix 4 Pre- and post-test evaluation form

LIST OF ABBREVIATIONS

ACMC Asynchronous Computer-mediated Communication

AS Activity System

CALL Computer-assisted Language Learning

CCSS Common Core State Standards

CMC Computer-mediated Communication

DMC Directed Motivational Current

FTF Face-to-face communication

ICALL Intelligent Computer-assisted Language Learning

ICT Information Communication Technology

SCMC Synchronous Computer-mediated Communication

SLA Second Language Acquisition

TBLT Task-based Language Teaching

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Computer-mediated communication in foreign language learning (Case study on the CityCompass application and Finnish language learners).

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ABSTRACT

Nowadays with the rapid development of technology and increased role of online environment teaching and learning through media is becoming an evitable educational method. The use of media and especially digital media for educational purposes call into question traditional teacher-focused approach to classroom learning. As the media are merging into education, teachers need to adapt to supplementary teaching resources and to a changing from teacher to student-oriented approach. Modified teaching methods require a thorough modification of existing classroom activities and a careful design of new tasks. In order to make teaching through media highly effective and motivating, the teacher needs to be not only a competent educator but also a media literate specialist.

The convergence of media and technology is enriching traditional teaching and learning methods. Computer-mediated communication (CMC) with the essential role of task-oriented activities has become one of the most used concepts of technology use in language learning. Notwithstanding the fact that there is a large volume of published studies devoted to task-based language teaching, the research to date has tended to focus on the traditional face-to-face teaching rather than on the task-based language teaching in the technology-mediated environment.

The aim of the research is to examine a possible impact of the online way-finding application called CityCompass on the Finnish language learners' speaking skills. The key research question of the study asks what influence computer-mediated communication has on foreign language learning.

The following study is qualitative research due to its aim to explore and understand a researched subject among a particular group of people by means of behavior observations, face-to-face interaction, and the use of audio and visual data. Due to the participatory nature of the research, it employed an action research method.

The data collection procedure of the research involved multiple types of data collection tools: a qualitative observation, interviews, qualitative documents, practical experiments with the implementation of qualitative audio and visual materials and questionnaires.

The findings of this study suggest that computer-mediated communication can have a significant impact on learners' motivation and encouragement to be actively engaged in the learning process. The second major finding is that computer-mediated communication has a positive effect on learners' target language speaking skills. Computer-mediated communication in language learning can be a useful tool for expanding learners' vocabulary and developing their language fluency. Moreover, the analysis of the findings proposes a hypothesis about a positive correlation between the level of students' media literacy and their task performance.

Keywords: media literacy, computer-mediated communication, task-based language teaching, technology-mediated environment

1 INTRODUCTION

Nowadays with the rapid development of technology and increased role of online environment teaching and learning through media is becoming an inevitable educational method. David Buckingham (2003) characterizes the current role of media as a dynamic process that builds a connection between such areas, as 'technologies, economics, texts, and audiences.'

The use of media and especially digital media for educational purposes call into question traditional teacher-focused approach to classroom learning. As the media are merging into education, teachers need to adapt to supplementary teaching resources and to a changing from teacher to student-oriented approach. Modified teaching methods require a thorough modification of existing classroom activities and a careful design of new tasks. In order to make teaching through media highly effective and motivating, the teacher needs to be not only a competent educator but also a media literate specialist.

The literature on media literacy points out that being a media literate person includes having critical thinking skills and understanding that media messages can be influenced by the biases of its creator and a medium used for its creation. A media literate person acknowledges a role of the audience in the process of making meanings and notes that each individual has a unique way to negotiate meanings of media messages. Being media literate also includes the ability to acknowledge a close connection between media forms and content and to recognize the way that media genre shapes the content of the message and vice versa. A media literate person is aware of commercial, political and ideological implications of media products (Association for Media Literacy, 2008).

The convergence of media and technology is enriching traditional teaching and learning methods. Computer-mediated communication (CMC) with the essential role of task-oriented activities has become one of the most used concepts of technology and media use in language learning. Notwithstanding the fact that there is a large volume of published studies devoted to task-based language teaching, the research to date has tended to focus on the traditional face-to-face teaching rather than on the task-based language teaching in the technology-mediated environment.

This study seeks to obtain data which will help to increase the understanding of the influence that media and technology use in language learning can have on learners' target language skills. The present research aims at examining a possible impact of the online way-finding application called CityCompass on the Finnish language learners' speaking skills. The current study seeks to address the following research question: How does computer-mediated communication influence learners' target language speaking skills?

The following study is qualitative research due to its aim to explore and understand a researched subject among a particular group of people with the help of behavior observations, face-to-face interaction and the use of audio and visual data. Due to a participatory nature of our research, it employed an action research method. The data of the current study were collected by means of qualitative observations, interviews, practical experiment and analysis of qualitative documents.

According to Reason & Bradbury (2006), the process of collecting the data is divided into following cycles: planning or design, action or intervention, and the reflection. Since current thesis adopted an action research approach, we followed Reason & Bradbury (2006) and divided the data collection process into three parts: experiment design, actual experiment, and data analysis.

The experiment took place in one of the computer laboratories at University of Tampere and aimed to examine the influence of a way-finding application CityCompass on the Finnish language learners' speaking skills. The amount of the participants was limited to 13 students for the actual experiment and one student for the pilot session. All the participants were international students in Finland, who were taking a degree in different areas at the universities of Tampere and had been learning the Finnish language for at least six months. It should be noted, that among the experiment participants four students were majoring in media education.

The selection of this research topic is explained by my personal experience and passion for learning foreign languages. My interest in this area appeared when I was taking a degree in Linguistics at the Lobachevsky State University of Nizhny Novgorod in Russia and developed significantly when I started to study Media Education at the

University of Tampere in Finland. Taken together, my interest in the use of new technologies for foreign language teaching and learning and a good understanding of the importance of media literacy in it have driven this research.

The overall structure of the study takes the form of six chapters, including this introductory chapter as the first one.

Chapter Two provides a brief overview of the existing literature on the concept of computer-mediated communication in language learning. This part of the study begins by introducing the concept of media education and its role in modern education. The chapter will then provide a general overview of the concept computer-mediated communication in language learning and its main modes: synchronous and asynchronous computer-mediated communication. Further sections of Chapter Two are devoted to the topic of task-based language teaching in the technology-mediated environment and the factors that influence its effectiveness.

Chapter Three is concerned with the methodology and data collection tools used in this study. This chapter also provides a structure of the data collection process and a detailed description of all steps completed within each cycle of the research's data collection process.

The fourth chapter presents the findings of the research, focusing on the following key aspects: participants' Finnish language learning background, their experience of CityCompass application use, students' pre- and post-test performance and their perception of tasks' complexity, motivation in target language speaking skills. This chapter also provides a brief summary of the findings.

Chapter Five is devoted to the evaluation of the study, including the estimation of its reliability and the introduction of research limitations. In this chapter areas for further research are identified.

Chapter Six closes the present thesis with a discussion on connecting and comparing the theory on computer-mediated communication in language learning with the results

obtained during the research process. References and Appendices are presented at the end of the study.

2 COMPUTER-MEDIATED COMMUNICATION AND LANGUAGE LEARNING

2.1 From computer education to media education

In the past decade, task-based language teaching has seen a gradual change from the concept of computer literacy to media literacy. While computer literacy is mostly focused on the technical mastery of machine usage, media education is focused on providing 'pedagogic support to human relationships with media' (Kotilainen, 2015). In the early 1990s, the seminal Aspen Institute Report of the National Leadership Conference on Media Literacy identifies the primary objective of media literacy as 'critical autonomy in relationship to all media' (Aufderheide, 1993).

Above mentioned human relationships with media include various types of human and media interaction, including teaching through media tools. Sol-Britt Arnolds-Granlund (2010) suggests that the concept of media in education covers three key aspects: 'learning from media,' 'learning and teaching about media' and 'learning and teaching with the help of media.' The same researcher highlights that the concept of media as an educational tool has a close connection with information technology. Likewise, Barry Duncan (2006) draws a crucial distinction between pedagogical approaches to teaching through media and teaching about media.

Among the variety of modern communications that form media David Buckingham (2003) lists: 'television, the cinema, video, radio, photography, advertising, newspapers and magazines, recorded music, computer games and the Internet.' The same author claims that 'media texts' combine audiovisual and text content and include 'programmes, films, images, websites' and other sources created by means of various types of communication. Buckingham (2003) characterizes the current role of media as a dynamic process that builds a connection between such areas, as 'technologies, economics, texts, and audiences.'

It is now a well-established fact that media have already become the major means of communication and multifaceted exploration of the modern world. Nowadays with the

rapid development of technology and increased role of online environment teaching and learning through media is becoming an inevitable educational method. The convergence of media and technology is enriching traditional teaching and learning methods. As educators in general and media educators, in particular, have started to take on the challenge of adding media as teaching resources, the need to investigate the question of new objectives of media education arises. Furthermore, despite the increased role of media in education, further steps are required to make this convergence more effective and narrow existing gaps.

The use of media and especially digital media for educational purposes call into question traditional teacher-focused approach to classroom learning. As the media are merging into education, teachers need to adapt to supplementary teaching resources and a changing from teacher to student-oriented approach. Modified teaching methods require a thorough modification of existing classroom activities and a careful design of new tasks. In order to make teaching through media highly effective and motivating, the teacher needs to be not only a competent educator but also a media literate specialist.

Drawing on the concept of being media literate, Sol-Britt Arnolds-Granlund (2010) suggests 'being educated, literate and cultivated' as the key characteristics. The literature on media literacy has highlighted several key skills that a media literate person has (Association for Media Literacy, 2008):

1 Understanding that media tend to represent reality in a way that these representations would seem accurate and valid whereas each media message is influenced by the biases of its creator and a medium used for its creation

2 Acknowledging a role of the audience in the process of making meanings and understanding that each individual has a unique way to negotiate meanings of media messages

3 Considering commercial, political and ideological implications of media products

4 Acknowledging a close connection between media forms and content and recognizing the way that media genre shapes the content of the message and vice versa

Aaron Delwiche (2010) draws our attention to the gap between the dynamically changing communication patterns and the media literacy curriculum falling behind the media habits of the young generation. The same author highlights the need for media educators to monitor modern media trends and changes in youth perception of media and to adapt media literacy curriculum accordingly. This view is supported by David Cooper Moore and Theresa Redmond (2014) who emphasize that honoring 'students' popular culture, fandoms, and interests as topics that are not opposed to but are directly connected with the curriculum and values' can increase learners' engagement in the learning process and thus make the teaching highly effective.

The introduction of Common Core State Standards (CCSS) encourages teachers who want to enrich their teaching methods and modify them to the needs of the modern generation of students to reconsider the role of media and technology in the educational process. Drawing on a significant role of information and communication technologies and media in contemporary youngsters' lives, Rideout et al. (2010) argue a continuous increase of media use among youngsters between 11 and 14 years old. These authors make an estimate of about four more hours of media use each year and consequently up to twelve hours daily engagement with media among adolescent students.

Common Core State Standards provide support for the implementation of media literacy education in the school curriculum. By drawing on the concept of media literacy education as a part of school curriculum, Moore& Redmond (2014) set out the key aspects that link media literacy with the goals of the Common Core State Standards. The researchers identified five key aspects:

1. Media Literacy expands the concept of 'text'
2. Media Literacy Integrates into the Standards; It doesn't replace them
3. Media Literacy involves rigorous research through a variety of sources
4. Media Literacy requires the use of informational and nonfiction texts
5. Media Literacy connects students' school experiences to broader society through civic engagement (Moore& Redmond, 2014, pp. 11-13).

In their analysis of key ideas that link media literacy with the goals of CCSS, Moore& Redmond (2014) claim that media literacy education applies both print and non-print texts, where non-print texts include the use of symbols in the form of audiovisual and interactive media. The researchers suggest that media literacy corresponds to existing educational standards and goals and only aims to enrich traditional means of achieving them. As an example of the variety of modes used in media literacy education, Moore& Redmond (2014) suggest the integration of traditional tools, such as print texts of classic literature and interactive environment. The researchers claim that the use of web-based search tools and the accessibility of information in the modern digital world to be a useful tool for developing students' skills in navigating and perceiving information. Commenting on the ability of media literacy to build a connection between learners' school experience and the digital era we live in, Moore& Redmond (2014) suggest that media literacy education can develop students' critical thinking. Researchers claim that media literacy can enhance students' understanding of how modern media and popular culture can distort the reality and therefore create stereotypes or, on the contrary, provide recipients with new perspectives and insights.

Collectively, all of the studies presented thus far draw our attention to the fact that a continuously increasing role of media and information technologies in the field of education does not only enrich traditional teaching methods but also requires educators to consider the challenges that media and technology use in the classroom can pose. However, most research provides the evidence for media literacy to make the convergence of digital media and education more effective and to narrow existing gaps.

2.2 Computer-mediated communication

Rapid development of the technology has a profound impact on the foreign language learning and teaching both in and outside the classroom. Van den Branden et al. (2009) point out that changes in language teaching and learning are often the result of new technologies development, citing some technological products as essential tools for the 'audio-lingual and audio-visual methods.'

Digital era we live in provides us free access to various multilingual sources of audio and visual interaction, which consequently contributes to traditional face-to-face, distance and blended learning. Nowadays blended learning methods have been increasingly applied to the teaching process. These methods include some elements of traditional face-to-face teaching and the use of Information Communication Technologies (ICTs) as an additional method for increasing study effectiveness.

It is now well established from a variety of studies that with the increased role of computer-assisted language learning (later on CALL) the popularity of task-based language learning has been growing. Much of the literature since the 1930s claim the importance of an interactive type of learning where the students could take an active part in the learning process and have real-world experience. Lamy (2007), Hampel (2004) draw our attention to the crucial importance of interaction in language education and same researchers highlight that the significance of this concept has already been recognized since the 1980s.

In contrast to the knowledge gained 'in isolation,' Dewey (1938) suggests the phenomenon of experimental learning with a shift from a passive role of learners to the one with the increased level of interaction and learners' involvement. This view is supported by Bruner (1960, 1962) who draws an analogy between the learning process and a 'discovery' and Gass (2000) who underlines that successful second language learning is possible with the learner's active involvement in result-oriented oral activities, which provide a good opportunity for reorganizing learner's interlanguage.

Computer-mediated communication (later on CMC) with the essential role of task-oriented activities has become one of the most used concepts of technology use in language learning. As Levy and Stockwell (2006: 248) state: 'in established CALL, language-learning task design is very much at the heart of the matter'.

2.3 Synchronous and asynchronous computer-mediated communication

The literature on computer-mediated communication in language learning has highlighted that the usage of one mode of communication is most common in CMC in the area of foreign language acquisition and there is a lack of research on the implementation of multiple modes. Previous studies mostly defined the usage of several communication modes in language learning as 'multimodality' (Hampel & Hauck, 2004; Kress, 2000; Kress & van Leeuwen, 2001).

The usage of one single mode of communication in CMC is exemplified in the work undertaken by Thomas and Reinders (2010). These researchers provide communication via email, through chat, video- or audio-conferencing as an example of implementation of only one communication mode in CMC in the field of language learning.

However, there is no surprise that constant development of new technologies has made it possible to use several modes of communication at the same time and with only one device. Thus, the interest in multimodality and the frequency of its implementation are growing at a significant rate.

As noted by Kress (2003) the rising popularity of technology in language learning will cause a lot of losses and winnings, and therefore some modes of communication will be more effective and others less.

Ligorio (2001) highlights that the use of multiple modes in language teaching may confuse learners, especially those, who feel less confident at technology usage. In regard to multimodality in language teaching, the same researcher draws our attention to the risk of students avoiding more challenging verbal communication and switching to non-verbal one by means of symbols, emoticons, pictures.

In the present study, we will focus on communication tasks because this study is mainly concentrated on the use of technology for foreign language speaking practice and synchronous computer-mediated communication (hereafter SCMC) in particular.

Synchronous and asynchronous computer-mediated communication serve as an example of the most common modes in the field of CMC. In the present study, the term 'SCMC' is used to refer to virtual communication which takes place in real-time. In the asynchronous computer-mediated communication (later on ACMC) interaction doesn't take place in real-time and participants are not obliged to be online at the same time. Online chats, audio-and video-conferences serve as the most popular forms of SCMC, while ACMC is mostly presented in email exchanging, writing or commenting on other parties' blogs.

One of the main difference between these two types of CMC is different time limitations. Due to its real-time nature, SCMC requires participants to be faster in reactions and responses, which can impact the quality and complexity of students' output. At the same time, ACMC exerts less time pressure and participants are enabled to refer to needed resources.

It should be noted, that the distinction between SCMC and ACMC tasks is not that strict and some forms of SCMC allow more lenient time burden. Hoven (2004) uses the term 'delayed synchronous' to refer to this type of SCMC. Textual SCMC with its option of editing messages can serve as a good example of 'delayed synchronous' CMC.

Teachers should be careful about what form of CMC to choose, and learners' abilities and language level should be also taken into consideration. While ACMC or delayed SCMC tasks give more time to think the responses over, such types of SCMC tasks, as audio-or video-conferencing with its high time pressure can be inappropriate and daunting for students of a lower proficiency.

Several comparative studies have been conducted in order to examine the outcomes of students engaged in SCMC and ACMC. All the reviewed studies show that learners involved in SCMC produced more meaning-focused language but with lower accuracy than those in ACMC (Abrams, 2003; Sotillo, 2000; Hwanf, 2008). According to reviewed comparative studies, SCMC is more effective in terms of vocabulary variety, but participants of ACMC tasks provide syntactically more accurate language output.

In the present study, the term ‘SCMC’ is used to refer to virtual communication which takes place in real-time. In the asynchronous computer-mediated communication (ACMC) interaction doesn’t take place in real-time and participants are not obliged to be online at the same time. Online chats, audio-and video-conferences serve as the most popular forms of SCMC, while ACMC is mostly presented in email exchanging, writing or commenting on other parties’ blogs.

2.4 Task-based language teaching in the technology-mediated environment

Task-based language teaching (hereafter TBLT) has long been a question of great interest in the field of second language acquisition. Notwithstanding the fact that there is a large volume of published studies devoted to TBLT, the research to date has tended to focus on the traditional face-to-face teaching rather than on the task-based language teaching in the technology-mediated environment.

In their work ‘Task-based language learning and teaching with technology’, Thomas and Reinders (2010:5) point out that the main focus of TBLT is on providing learners with ‘meaningful, real-world, functional tasks based on access to authentic materials’.

Elis et al. (2006) assume that tasks in a face-to-face classroom environment and those in a technology-mediated context may not have the same effect and operate similarly. Therefore, the same author draws our attention to a need for careful task design with regards to technology type the task is going to implement and the environment it will be used in.

Notwithstanding the acknowledged importance of authentic task-based language teaching and the variety of task-based approaches and tools in modern CALL, some important aspects should be taken into consideration for the effective learning.

In their ‘Handbook of Research on Foreign Language Education in the Digital Age’ Wang & Winstead (2016) identify several key aspects that enable effective language learning in a technology-enhanced learning environment. According to these authors, in order to have a successful learning experience, students should be primarily provided with the appropriate technology including such constituents as a high-speed Internet

connection, necessary software, and hardware together with technical support in case of any technological problems. Along with the technological equipment, students should be also given some basic troubleshooting training and proper instructions on how to use required technology. Wang & Winstead (2016) highlight that meeting these requirements is also important for educators. Among other factors that influence learning effectiveness, there are learners' motivation, anxiety, task types, and task complexity.

2.4.1 Motivation

It is now well established from a variety of studies, that motivation plays a significant role in foreign language acquisition. A concept of language learning motivation has been widely researched both in educational psychology and in the field of second language acquisition (later on SLA).

A considerable amount of literature has been published on a general concept of motivation and language motivation in particular. Over the past decades, a large number of theories on motivation was developed.

Deci and Ryan (1985) have developed a 'self-determination theory,' which is considered one of the first and famous theories about motivation nowadays. 'Self-determination theory' provides a thorough analysis of self-determined task engagement and introduces the concepts of 'intrinsic and extrinsic motivation.' Deci and Ryan (1985) characterize 'intrinsic motivation' to stem from a human's willingness to be involved in a task for his/ her own sake, while 'extrinsic motivation' appears due to external reasons and rewards. Same researchers list the human need for autonomy, competence, and connection to other people as the major factors in human's motivation.

In 1997, Vallerand provided a further distinction of human needs that arise 'intrinsic motivation,' which included willingness: a) to learn and derive satisfaction from getting new knowledge, b) to achieve a goal and get the satisfaction of challenging oneself, c) to feel a sensation.

‘Directed Motivational Current’ (later on DMC) is one of the novel concepts in the field of motivation. It was used by Dörnyei et al. (2011) to refer to ‘unique periods of intense motivational involvement fueled by a highly valued goal/ vision,’ which can ‘energize language learners to perform beyond expectations and across several levels and timescales, including long-term engagements.’ Same researchers highlight that DMC should not be confused with the average stable level of ongoing motivation that a good student can have. DMC is generally characterized by a relatively short period and an incredibly dynamic burst of motivation. Dörnyei et al. (2011) identify goal orientation, the precise structure of goal achievement, the autonomy of an individual, his/ her positive attitude and clear understanding of progress as the main characteristics of Directed Motivational Current.

2.4.2 Anxiety

There is a large number of published studies (Horwitz, 2001; Sheen, 2008) that consider anxiety an affective factor to influence the effectiveness of language learning.

In the present study, the term ‘language anxiety’ is used to refer to tension or discomfort caused by some activities in a foreign language learning (MacIntyre & Gardner, 1994; Horwitz, 2010; Horwitz et al., 1986; MacIntyre and Gardner, 1991b).

Some researchers (Spielman & Radnofsky, 2001; Eysenck, 1979) argue for anxiety to have a positive impact on learning results, others (Dörnyei, 2005) claim that there is no connection between language anxiety and learning achievements, while most pose only adverse effects of anxiety (Cheng et al., 1999; Horwitz, 2001; Parkinson &Howell-Richardson, 1990). This view is supported by MacIntyre & Gardner (1991) who claim that foreign language anxiety can weaken learner’s short- and long-term memory for recalling numbers and vocabulary of a target language, but simultaneously doesn’t have any effect on performing same tasks in learner’s first language. Conversely, Eysenck (1979) considers anxiety a decisive factor to facilitate learner’s efforts in language learning.

At the same time, some authors question the effect of anxiety on the learning process. In the same vein, Parkinson & Howell-Richardson (1990) analyzed 51 learning diaries and found no link between the level of learners' anxiety and their learning progress.

Unlike Parkinson & Howell-Richardson, Sheen (2008) reported a link between language anxiety and language teaching and learning process. To examine the connection between anxiety and learning process, the same researcher conducted an experiment, where she divided 45 learners into several groups, depending on their anxiety level. To analyze the relationship between anxiety and language learning, the researcher asked both low-anxiety and high-anxiety group to perform several types of tasks. Research findings showed that learners with a low level of anxiety performed better in a dictation and writing tasks, they also showed better output in a recast practice, while high- anxiety students were more successful in error-correction tasks.

Chastain (1975) reported a negative effect of anxiety on the test scores of French learners in a learning environment, where an audio-lingual method was applied, while the same method was used in German and Spanish classrooms and a positive connection was detected.

It is noted by Elis (2008) that foreign language anxiety differs from other types of anxiety, it leads to different consequences, and therefore it stays independently and can't be compared to other kinds of anxiety. MacIntyre (1995) notes that language-learning anxiety can lead to differences in the foreign language learning process. In his study on language anxiety, this researcher concludes: 'language learning is a cognitive activity that relies on encoding, storage, and retrieval processes, and anxiety can interfere with each of these by creating a divided attention scenario for anxious students' (1995, p. 96).

It has been suggested that computer-mediated communication can be an excellent medium for lessening adverse effects of anxiety and enabling successful interaction and language practice (Kern, 1995).

Baralt & Gurzynski-Weiss (2011) compared the level of learners' anxiety in computer-mediated communication (CMC) and face-to-face communication (FTF). However,

results of their study, where twenty-five intermediate Spanish learners were asked to complete both CMC and FTF tasks, showed that there was no significant difference between learners' anxiety level in CMC and FTF interaction.

Up to now, many researchers (Gregersen & Horwitz, 2002; Hauck & Hurd, 2005) consider speaking to be one of the most anxiety-inducing activity and same researchers highlight that speaking in a classroom environment can be even more stressful for students.

Commenting on the classroom speaking tasks, Krashen (2003) uses a concept of 'pushed output' to describe situations when students are involved into synchronous communication and are forced to give immediate answers with the implementation of recently learned structures that might not have been acquired yet. This suggests an argument for CMC with its multimodality to create a less stressful and therefore, more student-friendly environment for either oral or written interaction.

In a study investigating anxiety in FTF and CMC, Kern (1995) compares teacher-led discussions held in FTF and CMC modalities. The results of the research indicate that a CMC-based discussion has been characterized as more student-oriented and productive, than the session given in an FTF modality. Moreover, research questionnaires show that the experience of CMC discussions has been ranked high by 93% of participants, who have also mentioned informal environment as one of the positive sides of the discussion in a CMC modality. Meanwhile, only 55 % of teachers have considered the integration of CMC-based discussions as a beneficial experience. Kern's research is also often used as evidence that CMC can serve as a useful tool for minimizing language anxiety.

However, there are also studies suggesting other ways to lessen learners' anxiety besides the incorporation of CMC modality. The study of synchronous communication conducted by Lamy (2007) can serve as one of the examples of research that has suggested the establishment of the atmosphere of trust in a language classroom as a tool to reduce students' anxiety and thus will improve the efficiency of task performance.

Despite a significant number of the study done on the language anxiety, this topic needs systematic research to confirm the findings of previous studies and further investigations to have an in-depth understanding of the subject.

2.4.3 Task choice, task types, and performance

Efficient TBLT is possible when a teacher while choosing tasks, takes into consideration all of the following aspects. As Schulze (2008: 63) notes these components are: 'needs and means analysis,' 'syllabus design,' 'material design,' 'methodology and pedagogy,' 'testing' and 'evaluation.'

The study by Elis (2003) was one of the first to enumerate common features of the tasks. These features include:

1. A task is a work plan
2. A task involves a primary focus on meaning
3. A task involves real-world processes of language use
4. A task can involve any of the four language skills
5. A task engages cognitive processes
6. A task has a clearly defined communicative outcome. (Ellis, 2003, pp. 9–10)

In this context in the present study, we will use the definition of the term 'task' suggested by Schulze (2008:63) who understood it as a 'goal-oriented communicative activity with a specific outcome, where the emphasis is on exchanging meanings, not producing specific language forms.' At the same time, pre-task and post-task activities refer to an activity system (AS) (Engeström, 1987; Mwanza & Engeström, 2005).

Ellis (2003) distinguishes between open and closed tasks, where open tasks are not intended for achieving particular results and closed require students to solve a problem and find a correct solution. Debates, roleplays or discussions can be seen as examples of open tasks, while tasks with limited choices where learners are expected to find a correct answer, or the best solution belong to a closed type. However, most research

emphasizes that CMC tasks include features of open tasks and literature about open CMC tasks with more specific results is relatively limited.

Willis (2001) distinguishes two main categories of pre-task activities. These are linguistic review and pre-task planning. In this context, intelligent computer-assisted language learning (later on ICALL) can be a useful tool for the introduction of task-relevant grammatical or lexicological review. As an example of ICALL usage in pre-task activities, we can take the following ICALL systems: E-Tutor for learners of German, Robo-Sei web-based system for Japanese and Tagarela for learners of Portuguese. All systems mentioned above operate similarly and enable students to practice vocabulary, grammar and listening comprehension. Systems provide an analysis of students input and feedback on mistakes afterward.

There is no surprise that due to certain conditions, for example, students' motives or their habitual behavior, task performance can differ and therefore the task outcome can vary. Learners' attitude is also considered to be one of the key factors that influence learning progress. Some researchers distinguish between the 'survival orientation' and the 'achievement orientation' (Breen, 1987; Avermaet et al., 2006). The 'survival orientation' is typical for students who tend to avoid being involved in the process of task performance, while learners with the 'achievement orientation' prefer to take an active part in a task process and to set their own goals.

Long (1996) claims that the effectiveness of language learning depends not only on the learning environment but to a greater extent on the learner's attitude, attention, and awareness. Thus, the role of a teacher is to increase enthusiasm and motivation of the learners with both the 'survival orientation' and the 'achievement' one.

A teacher acts as a facilitator to help students both to understand task instructions, encourage and if needed to assist in performing a task. However, it is important to remember that the duty of a teacher is not only to arouse learners' interest in a task and motivate them to take an active part in its completion. A teacher should also sustain a high level of motivation and surmount obstacles in all language learning activities without a limitation to only task performance.

2.5 Advantages and disadvantages of technology use

Despite the fact that the use of technology in foreign language learning and teaching has been a topic of investigation for several decades, there is no conclusive proof of its significant impact on the quality of language learning and teaching. Debate continues about the possible advantages and disadvantages of technology use in language learning and teaching.

Golonka et al. (2014) highlight that most research is focused on the effectiveness of the technology use as an additional means of language learning and teaching and its impact on such learners' reactions as motivation and pleasure of using it; but only a few researchers focus on technology as a useful tool to improve the learning process and its results.

Same authors argue that technology provokes learners to be more motivated, which can lead to a deeper engagement in a learning process and as a result, it can lead to the increased proficiency. Golonka et al. (2014) see technology as a good tool to provide learners with access to a larger amount of target language input and teachers with excellent opportunities for a more effective organization of the course content and stronger interaction with the students. Moreover, they claim that learners prefer using technology to being involved in traditional learning activities.

Unlike Golonka et al. (2014), Warschauer (2005) doubts that technology can have a positive impact on the effectiveness of the language learning. In his work 'Sociocultural perspectives on CALL', Warschauer claims that integration of technology into language learning makes students concentrate not on the language learning, but mostly on learning technology and less on the target language. This view is supported by Chambers & Bax (2006) who question the usefulness of CALL and highlight the need for more topic-related research and a detailed description of how all CALL components function in a real educational process.

It has been suggested that computer-mediated communication can be a suitable medium for lessening negative effects of anxiety and enabling successful interaction and language practice (Kern, 1995). Baralt & Gurzynski-Weiss (2011) compared the level

of learners' anxiety in computer-mediated communication (CMC) and face-to-face communication (FTF). However, results of their study, where twenty-five intermediate Spanish learners were asked to complete both CMC and FTF tasks, showed that there was no significant difference between learners' anxiety level in CMC and FTF interaction.

Overall, there seems to be some evidence to indicate that the convergence of media and technology is perceived to enrich traditional classroom activities and a significant number of educators have taken the challenge of introducing computer-mediated activities into traditional teaching methods.

Despite the popularity of computer-assisted language learning and increased interest in task-based language teaching and learning, there is a relatively small amount of existing literature on task-based language teaching and learning in the technology-mediated environment.

The current study aims to address the following research question: How does computer-mediated communication influence learners' target language speaking skills?

3. IMPLEMENTATION OF THE RESEARCH

3.1 A case study on the CityCompass application

The present study was designed to determine the effect of computer-mediated communication on Finnish language learners. The data were collected by means of qualitative observations, interviews, practical experiment and analysis of qualitative documents. In the present study following qualitative documents were analyzed: researcher's observational protocol, background information form, evaluation forms. In addition to analysis of above mentioned qualitative documents, four interviews were conducted and transcribed. Interviewees were four experiment's participants. Transcripts of the interviews were analyzed and served as an additional data analysis tool.

The following study is qualitative research due to its aim to explore and understand a researched subject among a particular group of people by means of behavior observations, face-to-face interaction and the use of audio and visual data.

An action research method is employed due to the participatory nature of the current study and its orientation to the practice and problem-solving. As action research, our study aims to examine a subject, tries to solve a problem and have an impact on the future perspectives.

The aim of our study was to examine a possible impact of the online way-finding application called CityCompass on the Finnish language learners' level of the target language speaking skills.

CityCompass is an online way-finding application that helps to improve learners' command of target language speaking skills. The application has 360-degree panoramic views of a city and requires two remotely located participants to collaborate in finding a way and reaching a particular place in a city. One of the participants acts as a guide, who is assigned to navigate the other participant's way to a preassigned place. The second participant has a role of a tourist, who needs to reach a particular spot by means

of guide's instructions. All communication is managed in a learner's target language. In the case of our study, Finnish became the only language of interaction between a guide and a tourist.

The route to a destination contains a sequence of panoramic views of a city with various exits possible. The only correct way is shown to a guide as a blue line, while a tourist can see only possible exits marked as green arrows. Every time a tourist makes the wrong choice, he/she comes to a dead end and needs to give a clear description of a current location to enable a guide to help him/her out. All participants interacted with the same female Finnish native instructor.

A guide's and a tourist's view of the panorama are provided in Figure 1 and Figure 2.

Figure 1: A guide's view of a city with a blue line showing the correct way

Figure 2: A tourist's view of a city with a green arrow showing a possible exit

The current study is limited to investing a possible effect of CMC only on the foreign language speaking activity. Even though other activities have the same value for effective language learning, as speaking, they haven't been a focus of present study.

Due to practical constraints, this paper cannot provide a comprehensive review of the impact that CMC could have on learners' language anxiety and motivation. However, it would be interesting to measure learners' level of anxiety and motivation at each stage of the experiment and to observe a possible change afterward.

Due to a participatory nature of our research, it employed an action research method, and as typical action research, it combined such characteristics, "self-research, research, and education" (Boog, 2003). As action research, the study aimed to examine a subject, tried to solve a problem and have an impact on the future perspectives. The research problem of current thesis was the limitations of the traditional face-to-face language teaching and a need to enrich it with modern tools.

It is a widely held view that action research is generally associated with active interaction between a researcher and a researched subject. The current study is not an exception, it is a practice-oriented study, in which the primary tools for gaining a deep insight into the topic were practical experiments and observations.

Boog (2003) underlines that along with a strong connection with a researched topic, a researcher should also have a good communication with other parties, involved in research. The same author argues that a researcher and the participants are not the only actors of the action research. He claims the importance of a "group of critical friends" as meaning a group of people to stay close to a researcher and give a critical review to help conduct an experiment in the most effective way (Boog, 2003).

Our action research involved the following actors: a researcher, participants of the experiment, a Finnish native speaker with the role of a guide in the CityCompass application, an observer during the whole experiment and an evaluator of the students' progress after the experiment. As a "group of critical friends" could be considered a scientific supervisor and a Finnish speaking guide.

For Boog (2003), action research is a 'mutually supported learning process for both the researcher and the researched.' Though historically action research has its roots in the phenomena of emancipation and empowerment, modern action research despite the significant changes remains some elements of the phenomena mentioned above.

The key idea of the emancipation can be seen in the freedom from limits, while the meaning of the empowerment can be explained through the personal growth and development. In terms of our study, the main features of the emancipation and empowerment can be identified in the researcher's freedom to design and perform an

experiment and in the researcher's education and acquisition of the researched topic accordingly. By the freedom of designing and performing an experiment we mean not only the researcher's prerogative to decide on the structure and the content of the experiment but also to complete the action research cycles at his or her own pace.

Since this study belongs to action research and aims to examine the effectiveness of the Virtual Learning Environment applications in foreign language learning by means of such a practical instrument as an experiment, it can be considered as a practice-based study with the features of a pragmatic paradigm.

According to Creswell (2014), the essential elements of the pragmatic paradigm are its orientation on the practice, focus on the problem solving, pluralistic approach and consequences of action. As the major characteristics of the pragmatic paradigm, presented by Creswell, fully corresponded to our approach, we considered pragmatic paradigm to be the most appropriate for my research.

Due to the pluralistic nature of the pragmatism, our research applied different data collection instruments. Therefore, observations, interviews, experiment, documents, and questionnaires were selected as data collection instruments in this study.

This section has attempted to provide brief reasoning of the methods and approaches applied in this research. To sum up, the following study is participatory action research, which employs the qualitative method and belongs to a pragmatic paradigm.

3.2 Data collection

According to Creswell (2014), one of the significant characteristics of qualitative research is its tendency to gather the data by means of observations and direct face-to-face interaction with people. The same researcher claims that instead of relying on one particular source of data collection, qualitative researchers usually collect various forms of data including interviews, observations, documents and the use of qualitative audio and visual materials.

The data collection procedure of our research involved multiple types of data collection tools: a qualitative observation, interviews, qualitative documents, practical experiments with the implementation of qualitative audio and visual materials and questionnaires.

In contrast to Creswell's argument that the qualitative researchers don't usually use experiments or questionnaires as a data collection instruments, we consider conducting an experiment and providing a well-structured questionnaire as the key data collection methods of my research.

According to Reason & Bradbury (2006), the process of collecting the data is divided into following cycles: planning or design, action or intervention, and the reflection. Since current thesis adopted an action research approach, we followed Reason & Bradbury (2006) and divided the data collection process into three parts.

The figure below provides a brief overview of the current research's cycles.

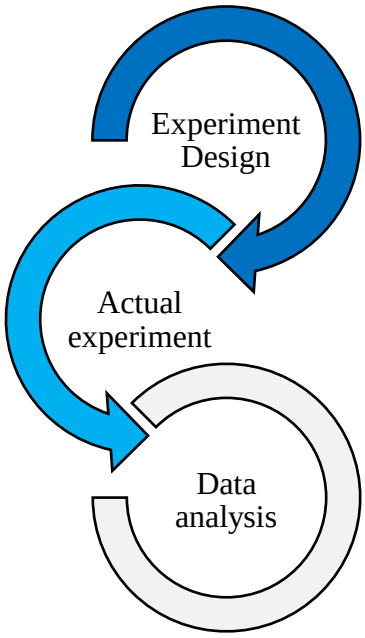

Figure 3: An overview of the research's cycles

3.2.1 Experiment Design

The initial phase of the data collection in our research was devoted to careful planning of the experiment. The early stages of this cycle were devoted to the designing of the experiment structure, reading of the topic-related literature, finding of the participants and a Finnish speaking person to assist me at the experiment, settings of the technical equipment and preparing of all the required documents for gathering information.

The role of a Finnish native speaker in the experiment was to act as a guide in a collaborative way-finding task of the CityCompass application. The guide's job was also to listen to participants' performance in a pre- and a post-test and to provide a researcher with detailed feedback on each student's changes in a language use after the completion of all tasks. This feedback contained native speaker's comments regarding student's performance in each task of the experiment. While a participant was completing the tasks of a pre-test and a post-test, a guide was located in the next room and was able to listen to answers and to make notes. Provided feedback was audio-recorded and transcribed.

While planning the experiment structure, we came to the conclusion that a pre-test and a post-test were needed to be able to evaluate participants' progress after the completion of the CityCompass application tasks.

Since the aim of the research was to examine the role of the online application CityCompass on the Finnish language learners' speaking skills, it was necessary to choose a pre-test and a post-test for the tasks that would require the use of the Finnish speaking skills. For the objective evaluation of the students' progress, it was essential to provide similar tasks for the pre- and post-test.

Taking into consideration that the CityCompass is a wayfinding application and its tasks are limited to following the guide's instruction, describing the locations and reaching the final destination, similar tasks for a pre-test and a post-test were selected. The pre-test enabled participants to refresh their memory of the topic-oriented vocabulary and practice to describe directions.

The key moments of the planning stage were to get technical support in the preparing of the computer laboratory, to provide a setting for the experiment record and to solve the technical issues in order to have all the required equipment ready for the use.

Further steps were to get familiar with the application and practice with a guide all the possible situations that the participants could face while performing the application tasks. To make a phase of getting familiar with the CityCompass application easier and faster, a Finnish speaking guide was provided with a printed instruction that included all the major steps needed from a guide's side. The following guidance also contained pictures of all spots of the city used in the application and correct directions. A guide was provided with the information on the steps needed in case a participant chooses a wrong path and as a result turns out to be stuck in a dead end.

Documents for the data collection consisted of the background information form, consent form, evaluation forms for a pre- and a post-test, CityCompass evaluation form and an observational protocol for a researcher. All forms as mentioned above can be found in Appendices.

One of the last steps in planning was devoted to making a schedule and finding the participants for our experiment. The amount of the participants was limited to 13 students for the actual experiment and one student for the pilot session. Ten participants were females, and three were males. Participants come from a variety of age groups, countries of origin and backgrounds.

One Finnish female native speaking tutor took part in the experiment. She acted as a guide in a collaborative way-finding task of the CityCompass application and assisted a researcher at other stages of the experiment.

The final stage of the planning circle was to conduct a pilot experiment to check the reliability of the chosen timeframe and tasks and to make final modifications. Pilot session enabled us to find out and solve some technical problems that hadn't been foreseen before. It also showed a need for making a change of the task types of a pre- and a post-test. The final version of a pre- and post-test's tasks can be found in Appendices.

Undoubtedly, due to the valuable practical experience gained during a pilot session, we were able to improve an actual experiment's structure and content.

It can be seen from the data in Figure 4 that the experiment design cycle was divided into three main stages. The initial step was devoted to careful planning of the experiment structure, which pivotal moment was to thoroughly examine relevant literature, prepare all necessary qualitative documents and design the experiment accordingly.

Further steps of the initial phase included the search for the right candidate for the role of a guide. The selection criteria were a native command of the Finnish language and candidate's interest in the topic of language learning with technology. Design of the suitable pre-and post-test tasks that would provide reliable evidence for answering the research question, careful technical settings and equipment testing were of the utmost importance.

The second stage of the experiment design was generally devoted to the organizational tasks of scheduling pilot and actual experiment sessions, preparing detailed instructions on how to use CityCompass application from the guide's side and exercising in application usage. One of the key moments of the second phase was to search for the experiment participants. The criteria used for the participants' selection included students' experience of Finnish language learning and their adequate command of the target language. A requirement of adequate command of Finnish language is caused by the tasks complexity and a need for participants to have a particular language level to complete the tasks.

The final stage of the experiment design cycle aimed at carrying out a pilot experiment session and on the basis of its results at making needed modifications. A brief overview of steps taken within an experiment design cycle can be seen in Figure 4.

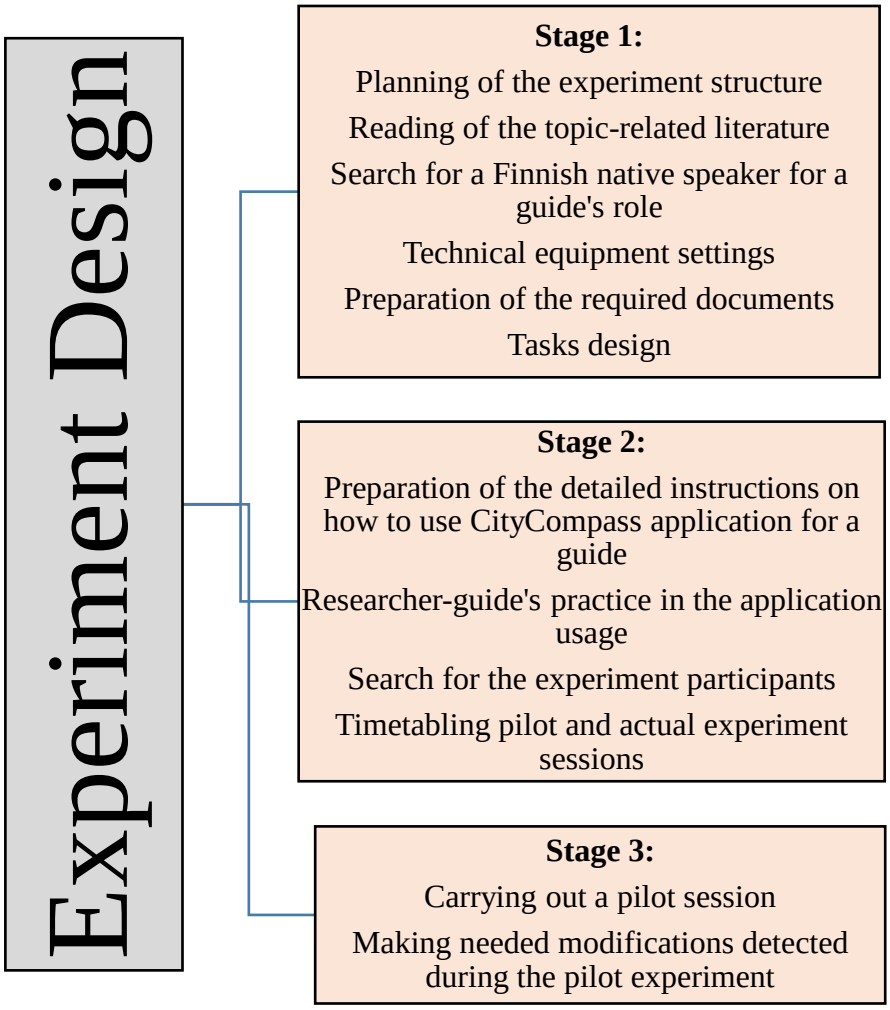

Figure 4: An overview of steps taken within an experiment design

3.2.2 Actual experiment

The second cycle of the current action research was devoted to the actual experiment. The experiment took place in one of the computer laboratories at University of Tampere and lasted for approximately two weeks. Due to the valid reasons, the initial plan to finish the action within one week was changed.

The first part of the experiment consisted of a brief introduction of the structure, aims of the study. After that, the participant was asked to fill in a background information form and to sign a consent form as official permission for the audio recording of one of the experiment's parts by signing a consent form.

The experiment took place from 15th to 27th of February 2017 and aimed to examine the role of the CityCompass application in the Finnish language learners' speaking skills. The whole experiment consisted of 13 separate sessions for 13 participants accordingly. Each session lasted for approximately one hour and was divided into several parts: introduction, a pre-test, use of the CityCompass application, filling in an evaluation form for the use of the application, a post-test, an evaluation of the tests. Researcher's instructions followed all parts of the experiment. During the whole experiment session, a researcher was taking notes and filling in an observational protocol.

While a participant was completing the tasks of a pre-test and a post-test, a guide was following the answers and making notes. She listened to the participants' speaking performance in a pre- and a post-test and provided detailed feedback regarding each participant's changes in a language use after the completion of all tasks. At the end of each session, a native speaker's feedback on a student's progress was collected and audio-recorded. This feedback was used for the evaluation of students' progress and analyzing experiment's results.

In a pre-test, participants engaged in the task where they were given a schematic city map and were asked to describe the way from one particular place to some other. The provided map presented participants with a schema of city streets where such places, as shops, libraries, post-offices, police stations, and schools were located.
The participants needed to describe out loud the location of particular places and explain the route from one place to another.

On completion of a pre-task, participants were given oral instructions on the initial steps needed to proceed with the second task, overall explanation of the rules and the aim of the task. Participants were also warned about dead ends and explained that, to get out of it, they needed to provide their guide with a detailed description of the surroundings they see and to follow guide's instruction on which direction to choose.

The second task required students to use CityCompass application and interact with a Finnish native speaker with the aim of completing application's task. In this task, participants pretended to be tourists who had to ask a local person the way to get to a

particular place of the city. A Finnish speaking guide and a participant were located in different rooms, and their communication was enabled via Skype audio call. All interaction was held in Finnish and participants had to ask questions, describe their current location and follow guide's oral instructions in a target language. This communication task included features of SCMC. In the first place, the concept of CityCompass involved synchronous communication between a learner and a native speaker. A guide's talk was dominant in that task of the experiment, whereas the pre- and post-test required only a participant's speaking activity.

As shown in Table 3, students' performance in the tasks was evaluated in terms of the variety of vocabulary they used, the amount and duration of pauses, and the time needed to formulate answers. The table below also presents an overview of tools that were used for evaluating participants' performance.

<table>
<tr><th>Sources</th><th>Criteria for evaluation</th></tr>
<tr><td colspan="2">During the experiment</td></tr>
<tr><td>A guide's feedback on each participant's results</td><td rowspan="2">Variety of vocabulary
Time needed for thinking over the answers
The amount and durations of pauses
Confidence in speaking</td></tr>
<tr><td>A researcher's observation during all stages of the experiment</td></tr>
<tr><td colspan="2">After the experiment</td></tr>
<tr><td>Audio-recordings of the experiment</td><td rowspan="4">Differences in a duration of a pre-and post-test
The amount and durations of pauses
Confidence in speaking
Participant's feedback and self-evaluation</td></tr>
<tr><td>Researcher's diary</td></tr>
<tr><td>Evaluation forms</td></tr>
<tr><td>Interviews</td></tr>
</table>

Table 3: Criteria for evaluation of task performance

On completion of the collaborative CityCompass task, participants were asked to fill in an evaluation form about their experience of CityCompass application usage. That evaluation was designed to evaluate how difficult, useful and exciting the collaborative way-finding task of the application was. A total of 9 questions were present in the evaluation form. The first set of items required students to indicate on a nine-point Likert scale how useful, interesting, difficult the task was and how clear the instructions on how to use the application and further guide's navigation were. One of the questions asked students to provide general feedback on the use of the application for language learning.

A similar evaluation form was designed to examine student's experience of completing a pre- and a post-test. The questionnaire contained similar Likert scale and required participants to reflect on the difficulty of the tests' tasks. The last question of the evaluation form asked students to compare the way they felt during a pre-and a post-test.

A post-test of the experiment duplicated the task of the pre-test. The same task type was chosen to examine the changes in language use more precisely.

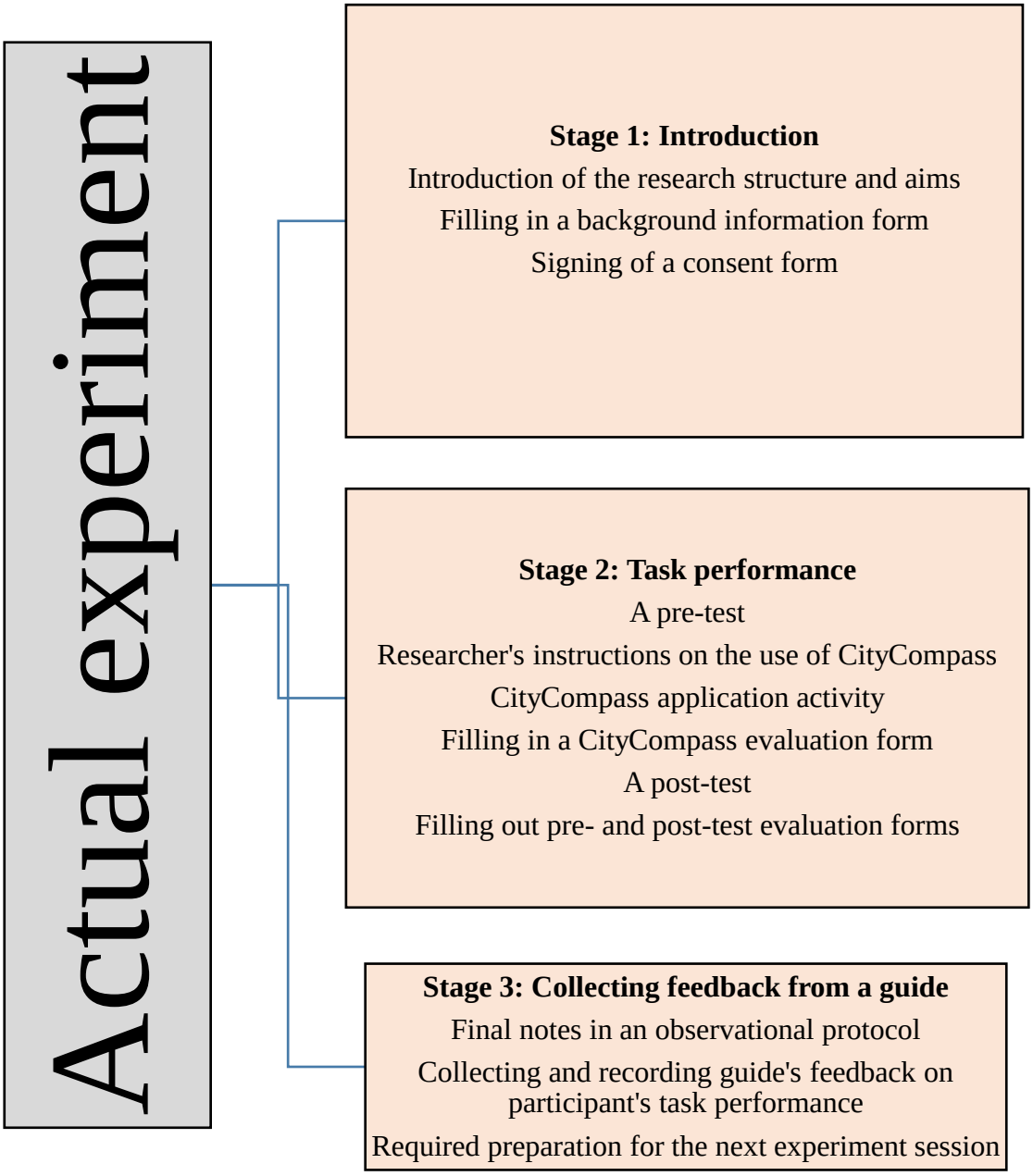

Figure 5: An overview of steps taken within an Actual Experiment

It can be seen from the data in Figure 5 that the actual experiment cycle was divided into three main stages: introduction, task performance, and feedback collection.

The initial stage was designed to briefly introduce the participants to the research aims and the experiment structure. Within the introductory part, participants were asked to fill in background information forms and to give permission to record some parts of the experiment by signing a consent form.

The core part of the second stage was devoted to participants' performance of pre- and post-test tasks and their engagement in CityCompass application activity. Tasks completion was followed by the participants' filling in evaluation forms. CityCompass activity was preceded by researcher's general instructions on the application usage. During the second stage of the actual experiment, the researcher was keeping a research diary and filling in the observational protocols where researcher's notes and comments were included.

The final stage of that cycle consisted of researcher's making final notes in the observational protocol, collecting and recording guide's feedback on the participants' task performance. One of the key moments of the third phase was to make necessary preparations for the next experiment session. Figure 5 provides a brief overview of steps taken during the research second cycle.

3.2.3 Reflection

This chapter has attempted to provide a brief review of current qualitative research with a general description of its aim, research questions, and methodology. The purpose of this chapter is to describe the approaches applied in the study and try to explain why these particular methods are considered the most appropriate for our research.

According to Reason & Bradbury (2006), the final cycle of action research is a reflection. This part of the action research includes a review of all the collected data, their analysis, and categorization. Creswell (2014) highlights that the primary purpose of the qualitative data analysis is to "make sense out of text and image data" and usually this process includes segmenting and taking apart the collected data (Creswell, 2014). Marshall and Rossman (1989) emphasize that in qualitative research the data collection and the data analysis process must happen simultaneously.

Data analysis in our research started when the process of data collection was still ongoing. During the experiment sessions, a researcher was keeping a research diary and filling in the observational protocols where researcher's notes and comments were

included. A researcher also kept track of time spent on completion of each task. It enabled us to compare students' performance in a pre- and a post-test regarding the time needed to complete the same type of task before and after the usage of the CityCompass application.

The data of the current study were collected by means of qualitative observations, interviews, practical experiment and analysis of qualitative documents. Four interviews have been conducted after the actual experiment. The selection of interviewees was based on the criteria of candidates' contrasting personalities and backgrounds. Interviewees come from different cultures and mostly have different academic and professional backgrounds. Countries of interviewees' origin are Greece, South Korea, Serbia, and Japan. All interviewed students belong to an age group 24-28 and acquire approximately the same level of the Finnish language. Interviews were conducted at the University of Tampere and took approximately 10-20 minutes each. Students were asked same questions.

The first set of questions aimed to examine students' source of motivation for learning a foreign language, self´-estimation of their target language skills and their ideas on how to make foreign language classes more effective.

Qualitative documents included background information form, CityCompass, pre-and post-test evaluation forms and researcher's observational protocol. The participant background information form was designed to receive information about learners' educational and professional background, to get an understanding of their experience of the technology use for foreign language learning purpose and to gain insight into the participants' perception of the technology use in language learning.

CityCompass evaluation form aimed at investigating students' experience of the application usage and the use of technology for language learning in general, while the aim of the pre-and post-test evaluation form was to compare learners' perception of difficulty levels of pre-test tasks and similar tasks of a post-test, which was performed on completion of CityCompass activity.

During the experiment sessions, the researcher was filling in a researcher's observational protocol, which aimed to include researcher's detailed description of all experiment stages, personal feedback on participants' performance and accurate notes regarding time spent on each part of the experiment.

Further examination of collected data included analysis of the results received from the evaluation forms. All data collected by means of evaluation forms were hand-coded and analyzed. Transcription and interpretation of native speaker's feedback on student's performance in each task of the experiment and its general comparison played a significant role in the process of data analysis.

In addition to data analysis tools mentioned above, four interviews were conducted. All data received from the interviewees were transcribed and thoroughly analyzed.

The final step of data analysis was to make a final interpretation of all gathered results and to report research findings.

4 LANGUAGE LEARNING WITH TECHNOLOGY

The following chapter presents the findings of the research, focusing on the following key aspects: participants' Finnish language learning background, their experience of CityCompass application use, students' pre- and post-test performance and their perception of tasks' complexity, motivation in target language speaking skills.

4.1 Participants' background in Finnish learning

Background information form was designed to collect information about learners' educational and professional background, to get an understanding of their experience of the technology use for foreign language learning purpose and to gain insight into the participants' perception of the technology use in language learning.

The amount of the participants was limited to 13 students for the actual experiment and one student for the pilot session. Ten participants were females, and three were males. Participants come from a variety of age groups, countries of origin and backgrounds. All the participants of the conducted experiment were international students in Finland, who were taking a degree in different areas at the universities of Tampere and had been learning the Finnish language for at least six months. Of the thirteen participants, four students were majoring in Media Education.

Table 1 and Table 2 provide general information on the number of participants, their age, and gender.

Sex or Male/ female ratio				Age			Total
Male		Female		the youngest	the eldest	Average	
3	23%	10	77%	22	33	25,3	13

Table 1: Participants of the experiment

Participant	Gender	Age	How many languages does he/she speak?	How long has he/she been studying Finnish?	Country of origin	Self-evaluation of Finnish skills
1	Male	28	6	2,5 years	Morocco	B1
2	Female	24	4	6 years 3 months	Great Britain	B1
3	Female	27	4	2 years	Greece	B1
4	Male	27	3	1,5 years	South Korea	A2
5	Female	24	3	4 years	Japan	B1
6	Female	23	4	1 year	Germany	B1
7	Female	22	5	3 years	Bulgaria	B1
8	Female	33	5	2 years	Lebanon	A2
9	Male	22	4	1,5 years	Russia	B1
10	Female	26	3	6 months	Iran	A2
11	Female	25	6	2 years	Serbia	B1
12	Female	25	3	2 years	Japan	B1
13	Female	23	4	1 year	Kazakhstan	A2

Table 2: Participants' background information

The first set of questions sought to obtain information about learners' previous experience of technology use for language learning purposes and when applicable to determine the frequency of use. Results indicate that the majority of respondents rarely use technology as means of foreign language acquisition. Of the thirteen participants, only three reported a high frequency of technology use in language learning. Three individuals claimed to have no experience of technology usage for educational purposes. Next question asked informants to give information on the number of languages they mastered. Last items of the survey were devoted to participants' Finnish language learning. Respondents were asked to tell how long they had been studying Finnish.

When the participants were asked to provide a self-estimate of their current Finnish level, some students reported their current level to be A2, while the majority considered a B1 level to be the most applicable to them.

According to *Common* European Framework of *Reference* for Languages (CEFR), A2 level students can understand sentences and expressions related to the areas of primary importance and communicate in the context of simple tasks and direct exchange of information. B1 is considered as an intermediate level; it requires students to understand

relatively complex ‘everyday use’ vocabulary and produce simple connected texts on familiar topics.

As can be seen from the Table 2, all participants except for one had been studying the Finnish language for at least one year. Of the thirteen learners, only one had studied Finnish for six months. The most experienced learner had been learning the language for over six years.

4.2. CityCompass application use

During the experiment, all participants were asked to fill in evaluation forms. First evaluation form aimed to investigate students’ experience of the CityCompass application usage. Participants were asked to evaluate on an eight-point Likert scale their experience of technology use in language learning and the CityCompass application in particular. In this set of questions, a range of options was varying from ‘bad’ (-4) to ‘good’ (4).

Next set of questions aimed to investigate how interesting for learners the application was and how useful they found it for the ‘wayfinding’ vocabulary practice. Respondents were provided with the following options: -4 corresponding to useless or boring, 0 indicating neutral attitude and 4 meaning useful or interesting. For convenience, evaluation form’s numeric range of -4 to 4 was coded as 0 to 8 accordingly. The results obtained from the CityCompass evaluation form are shown in Chart 1 and Chart 2.

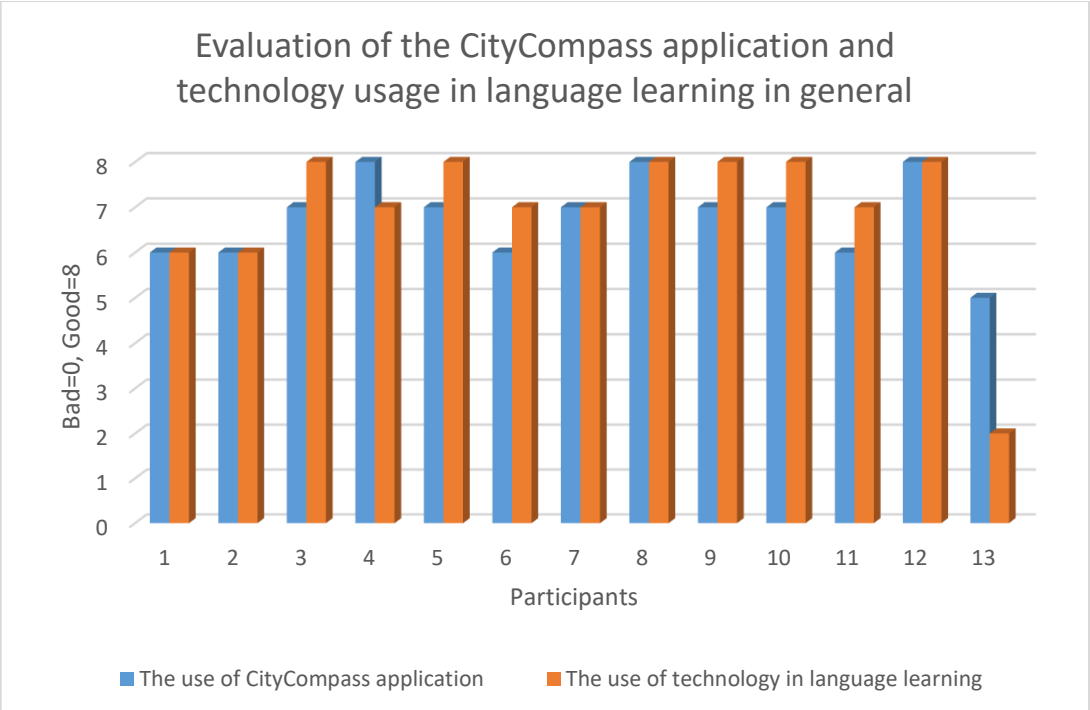

Chart 1: Evaluation of CityCompass application use and the use of technology in language learning in general

Chart 1 shows that of the 13 respondents who filled in CityCompass evaluation form, twelve learners highly rated the role of technology for language learning purpose. Same respondents gave similarly high rates to the CityCompass application. One respondent estimated the use of CityCompass application and technology in general for foreign language acquisition relatively low.

As can be seen from Chart 2 almost all respondents found CityCompass useful in terms of practicing 'wayfinding vocabulary.' The average estimate of application's usefulness for vocabulary practice is 7.1 out of 8 possible. Similarly, the majority of participants claimed the experience of CityCompass usage to be exciting. The mean score for the application to be interesting is 7.2 out of 8.

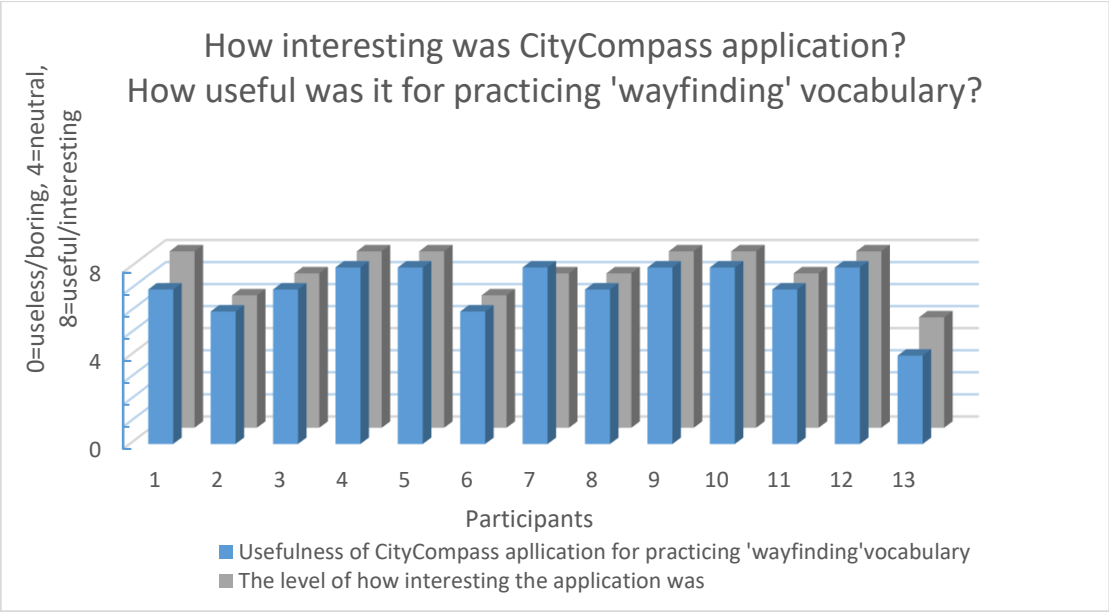

Chart 2: How interesting was CityCompass application? How useful was it for practicing 'wayfinding' vocabulary?

Similarly, to responses obtained to the previous set of questions, only one respondent out of thirteen rated the level of application's usefulness concerning 'wayfinding' vocabulary practice as neutral and similarly estimated the extent to which CityCompass was interesting as slightly higher than neutral.

With respect to the questions of the CityCompass evaluation form, it was found that the majority of learners consider the use of technology and CityCompass application in particular as a useful and interesting tool for educational purposes.

4.3 Perception of the tasks' complexity

The primary purpose of pre-and post-test evaluation form was to get participants' feedback on the difficulty level of each task of the experiment and to compare learners' perception of difficulty levels of pre-test tasks and similar tasks of a post-test, which was performed on completion of the CityCompass activity.

That evaluation form consisted of seven Likert scale questions with nine points to measure learner's perception of tasks' difficulty and two open questions to obtain

extended feedback on the use of CityCompass in general and on the difference of participants' self-perception at a pre- and a post-test.

The first set of Likert scale questions aimed to examine participants' perspective on the difficulty level of pre-test tasks and CityCompass activity. As shown in Chart 3, in response to these items, most of those surveyed indicated a relatively high difficulty level of a pre-test, whereas CityCompass tasks were considered slightly easier. The mean difficulty level of a pre-test was estimated at 5.5 out of 8 points, while the tasks of CityCompass got the mean score of 4.4, where option 4 corresponded to neutral difficulty and 8 to the highest one.

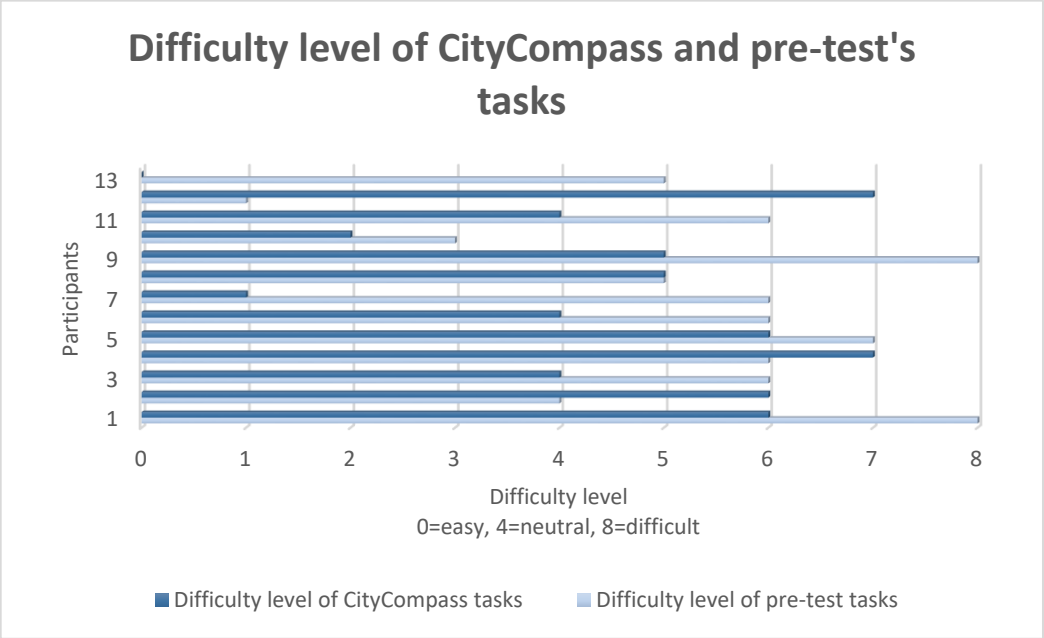

Chart 3: Difficulty level of CityCompass and pre-test's tasks

The next question asked the informants to compare the difficulty level of a pre-and a post-test. The respondents were provided with a range of options from -4 to 4, where -4 corresponded to the option of a post-test being easier than a pre-test and the score 4 referred to the answer that post-test tasks were as challenging as the tasks of a pre-test.

Chart 4 illustrates that approximately a third of the respondents felt that the post-test was as difficult as the pre-test. A major view amongst those surveyed was that

compared to their experience of a pre-test performance, it was easier to complete a post-test. This result suggests that active interaction with a Finnish native guide in a task-based environment of CityCompass application influenced participants' performance in a post-test. Interestingly, all participants with a major in Media Education indicated that the post-test tasks were much easier than the similar tasks of the pre-test. This result may be explained by the fact that these participants have a high level of media literacy, which enabled them to easily adapt to the use of new media forms.

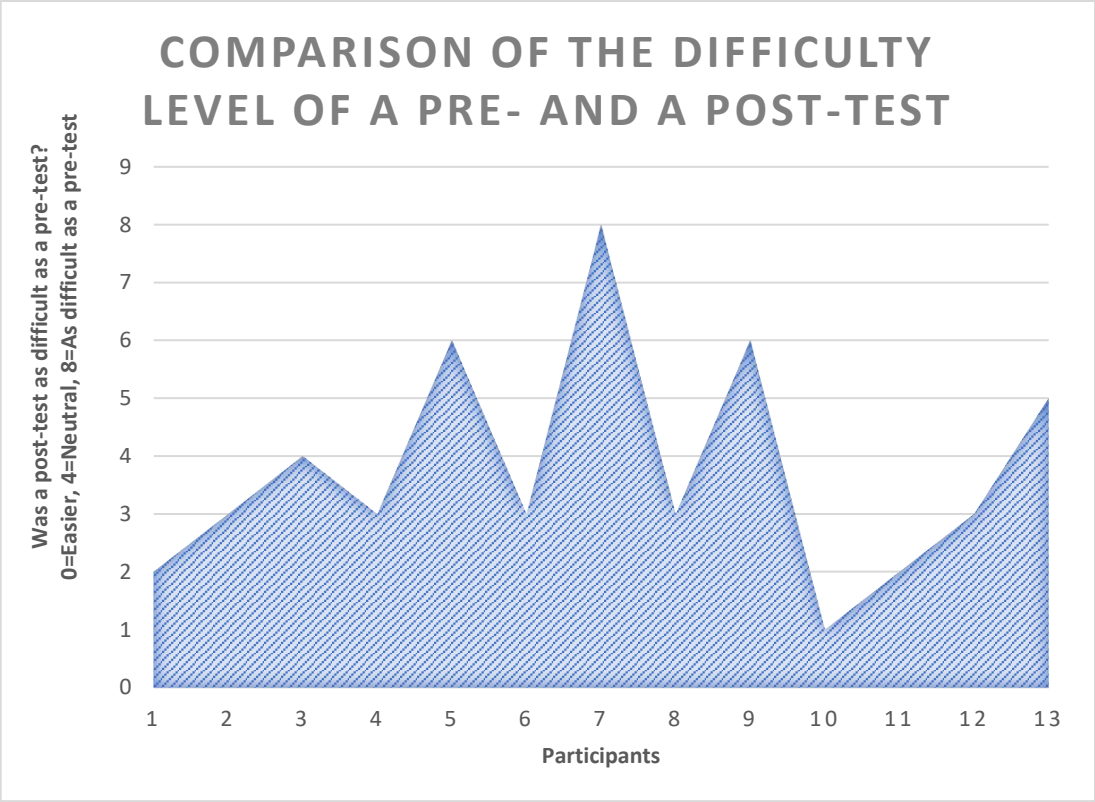

Chart 4: Comparison of the difficulty level of a pre- and a post-test

The first open question of the evaluation form asked respondents to indicate whether there was any difference in a way they felt during the pre- and the post-test. Responses to the following question proved that with the help of CityCompass application most of the students were able to refresh or expand their 'wayfinding' vocabulary and feel more confident in a post-test.

Some respondents indicated that during the pre-test they had difficulties remembering some wayfinding terms and highlighted that after hearing them in guide's instructions, they were able to memorize those definitions and use them later in a post-test session. In some cases, the informants mentioned the situations in CityCompass session, when they didn't know the meaning of some words used by a native speaker but were able to understand them due to the visual images of the application. While the majority of participants revealed a positive correlation between the usage of CityCompass and further improvement in their post-test performance, some reported no significant difference. One informant stated that after the usage of technology he felt less confident because he 'realized that there are many words I need but can't remember.'

Despite the fact that the primary purpose of that evaluation form was to compare the way the participants felt in a pre- and a post-test, the second open question aimed to collect learners' general feedback on the use of CityCompass for language learning. Respondents were asked to share their experience of being involved in the CityCompass activity.

The majority of those who responded to this item provided positive feedback on CityCompass as a tool for foreign language acquisition. Informants considered the application to be a useful and helpful tool with great potential and characterized their experience of using it as a highly motivating and enjoyable. It should be noted that of thirteen respondents one learner suggested the application to be useful only for those who are interested in technology. The same individual claimed to be a student, who always prefers traditional learning methods and doesn't feel the need for technology to merge into the field of foreign language acquisition.

4.4 Pre- and post-test performance review

Researcher's observational protocol aimed to include researcher's detailed description of all experiment stages, personal feedback on participants' performance and accurate notes regarding time spent on each part of the experiment.

The document was divided into several sections that corresponded to all stages of the experiment. Protocol's sections included researcher's comments about the participant's performance in each part of the experiment and a reliable estimate of the time spent on completion of each task. The researcher was filling in observational protocol during each session of the experiment.

Observational protocol findings show that the mean pre-test completion time was 4,7 minutes, while the mean time spent on completion of post-test tasks was estimated to be 3,8 minutes. Chart 5 reveals that there has been a marked reduction in time spent on the post-test completion. It can be seen from the chart that 10 out of 13 participants needed less time to complete tasks of a post-test than pre-test exercises. In regard to tests completion time, two participants showed the same results in a pre- and a post-test. Of 13 participants who took part in the experiment, only one individual completed pre-test tasks slightly faster than the ones in a post-test.

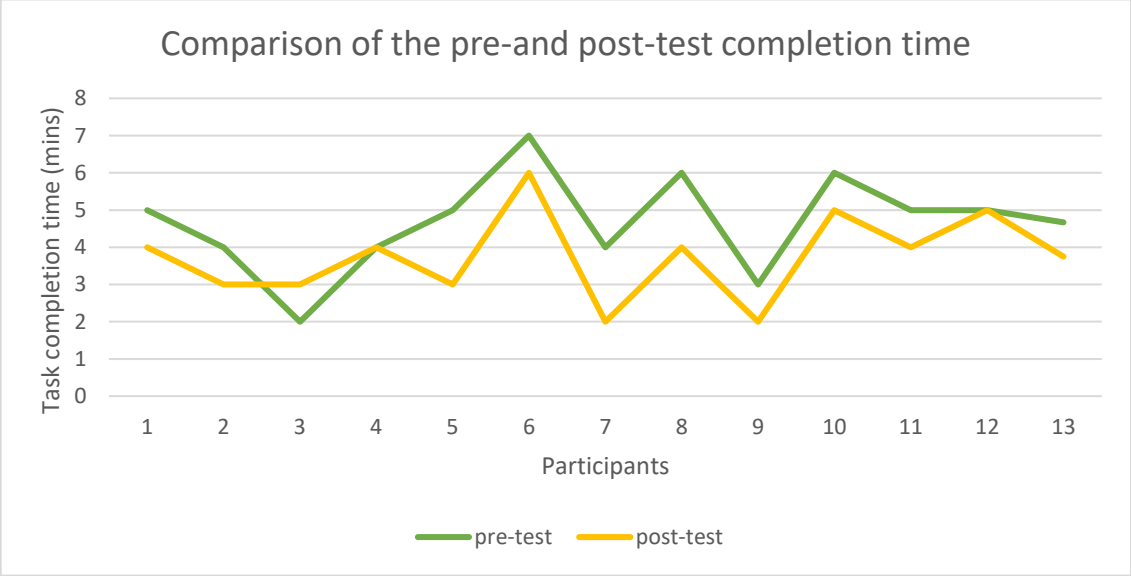

Chart 5: Comparison of the pre- and post-test completion time

Researcher's feedback on participants' task performance revealed that the majority of participants showed better results in a post-test. The criteria for that evaluation included the amount and duration of pauses made during the task completion, preparation time, speaking rate, variety and complexity of used expressions.

According to researcher's feedback, most of the participants needed less time to prepare for the completion of the post-test, made less or shorter pauses while speaking, used more extensive vocabulary and provided more detailed answers to the post-test questions. Observational protocol findings revealed that participants with a high level of media literacy showed a significant improvement of task performance in a post-test. Therefore, these findings may propose a hypothesis about a positive correlation between the level of students' media literacy and their task performance.

The analysis of guide's feedback revealed that the majority of participants showed better results after completing the task of the CityCompass application. A native speaking tutor used the variety of used vocabulary, the time needed for thinking over the answers, the amount and duration of pauses, confidence in speaking as the main criteria for the evaluation of learners' task performance. Feedback on completion of the post-test also included a direct comparison between student's speaking performance in a pre-test and the results of a post-test.

Due to the fact, that the focus of the current study was on a possible effect of CMC only on the foreign language speaking activity, no analysis of student's performance in writing or grammar use was carried out. It should be noted, that the amount of spelling or grammar mistakes was not a criterion for student's performance evaluation.

Analysis of the results showed that 9 out of 13 participants performed better in a post-test than in a pre-test. After completion of the collaborative task of the CityCompass, in a post-test, these participants used broader vocabulary with a larger variety of expressions to explain the route to a pre-assigned destination. Some of them also needed less time to think over the answers and made less or shorter pauses than in the same task type of a pre-test. Analysis of guide's feedback revealed a compelling case when a participant couldn't remember a specific Finnish word in a pre-test, but after completion of the CityCompass task, where a guide used that word several times, a participant remembered the word and could easily use it in a post-test.

There was no significant difference in speaking performance of four participants. These learners showed good command of communicative Finnish both in a pre-and in a post-

test. As feedback to these students' task performance, a Finnish guide characterized their speaking in all tasks as fluent, confident, with a large variety of expressions.

Taken together, these results suggest that there is evidence of computer-mediated interaction in language learning to have an impact on learners' target language speaking skills.

4.5 Motivation in foreign language speaking skills

According to data received from interviews, one of the strongest motivation for learning a foreign language is either a need or a great desire for communication in a target language. All interviewees emphasized that situations where they need to speak a target language motivate them to put more effort into studying the language. Among other sources of motivation were mentioned the ability to broaden your mind and to develop your intelligence with the help of language learning and a love for a particular country or a person from this country.

Despite the fact that all interviewees had a good command of a Finnish language, they tended to underestimate their level and seemed to feel not confident while speaking a foreign language. One of the reasons for this is a students' fear of being judged by their mistakes.

Interviews indicate that students feel more confident when they have to speak a foreign language in a friendly environment to people who support and encourage them. This data points to a conclusion that one of the significant elements of an effective foreign language lesson is an environment where students feel comfortable and are not afraid of making mistakes. Not surprisingly, with a better command of a foreign language, students feel more confident in speaking it. Moreover, the interviews prove that students feel less confident in writing and speaking activities.

Interview responses indicate that frequent practice and a friendly environment are the key factors that inspire students' confidence to speak a target language. In the interviews,

students were asked about the possible effective methods that a language teacher could apply to develop learners' speaking skills.

As Figure 3 shows, creating a friendly learning environment, providing communication with native speakers and finding a right balance between speaking and listening practice are among the most popular suggestions.

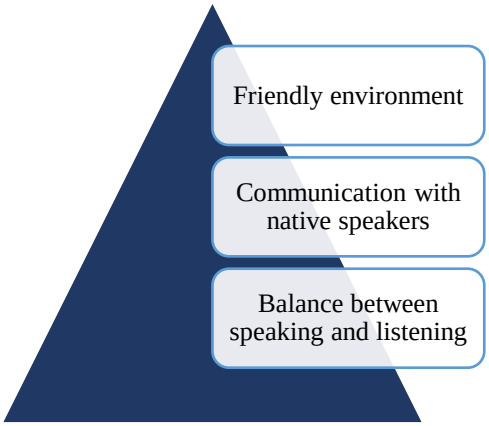

Figure 3: Key elements of an effective foreign language lesson

It is important to note that in our experiment we tried to take into account all of the above mentioned vital elements of successful learning. Our experiment consisted mostly of speaking activity, which is considered to be one of the most anxiety-inducing activity. Therefore, creating a friendly and trustful environment was one of the ways we tried to use to use to minimize participant's language anxiety.

Communication with a native speaker was enabled by means of the CityCompass application and the collaborative nature of its tasks. A Finnish native speaking guide was the one in charge of keeping a balance between speaking and listening. The dominance of guide's speaking in a communication part of the experiment was compensated by participants' active speaking in a pre-and a post-test.

All interviewees support the idea of making use of media in a foreign language class. According to interview responses, the most efficient media for a language class are movies, TV shows, documentaries, short videos, and images.

Three out of four interviewees consider the integration of technology into classroom activities as a highly useful additional tool to enrich traditional teaching methods. Only one of the students raises doubts about the effectiveness of technology use in a foreign language class. Nevertheless, the same interviewee admits that technology can be helpful when it comes to independent work on the foreign language vocabulary acquisition.

In the interviews, students were asked to reflect on their experience of participation in the experiment. The focus of interview's questions related to the experiment was on the participants' experience of using CityCompass application.

All interviewees consider the CityCompass application to be helpful for practicing speaking skills and repeating wayfinding vocabulary. Several participants mentioned that in the beginning it was difficult for them to remember topic-related vocabulary and once a Finnish native speaking guide gave the directions, they could connect the words with the occasion. One of the interviewees emphasized that even though the experiment took place some time ago, he could still remember vocabulary belonging to the topic of wayfinding.

In response to the question about the current role of technology in language learning, all interviewees indicated that technology had already taken a significant place both in the classroom and independent learning.

Commenting on the current role of technology in language learning, one of the interviewees argued that at the moment technologies worked mostly for speaking and listening skills practice, while another considered it to be a useful tool for learning new vocabulary, which is also applicable to developing reading competence.

When asked about the future role of technology in foreign language learning, the participants were unanimous in the view that technology will become an increasingly important tool for foreign language learning. It was also suggested that the frequency of

technology usage in foreign language learning would be dependent on how close technology could be to human interaction. If technology is advanced enough to imitate human interaction and even to correct students' mistakes, it will play a significantly more important role in foreign language learning than it currently does. Although the students think of a future prospering role of technology in foreign language teaching and learning, they doubt that technology can be advanced enough to hold human values, reach the same emotional level as humans and therefore to replace an actual teacher.

One of the interviewed students highlighted that in order to integrate technology in class activities effectively, a teacher needs to have a particular plan and a specific purpose of using technology, which excludes the usage of technology just for the sake of using it or following a trend.

Last questions were devoted to the benefits and drawbacks of the technology use in language learning. Interviewees were also asked about possible challenges of integrating technology into classroom activities.

Among the benefits of using technology interviewees mentioned its influence on the motivation level, its ability to combine several modalities and also to increase learner's interest. One of the interviewed students was skeptical about positive sides of technology and came up only with online dictionaries as an example of its benefits.

Despite all the advantages that technology can provide, students highlighted that it was also essential to take into account all negative sides that technology use had. When asked about drawbacks, students presented a variety of examples which didn't repeat each other. Among the disadvantages of technology use in language learning interviewees mentioned its limitation in an emotional aspect, disability to fully substitute human's interaction in terms of non-verbal communication and ability to understand and make jokes.

All interviewed participants came to the conclusion that technology could serve as an effective additional tool to enrich language learning process, but it couldn't replace traditional ways and become the key tool of language learning.

4.6 Summary of the findings

The research question of the study aimed to investigate how computer-mediated communication influenced learners' target language speaking skills. The main focus of the research was to examine a possible impact of the online way-finding application called CityCompass on the Finnish language learners' speaking skills. The results of the data analysis have been elaborated in the present chapter, and this subsection is designed to summarize research findings.

Contrary to expectations, analysis of background information forms showed that many more than half of the participants had rarely or never used technology as a tool for foreign language acquisition. It is difficult to explain this result, but it might be related to the fact that participants mastered their second languages at the time when the concept of computer-assisted language learning was not common, and in the process of a new foreign language acquisition they tended to employ usual methods.

Analysis of the CityCompass evaluation forms provides further support for the hypothesis that the use of technology for foreign language learning purpose can encourage learners and increase their motivation. Moreover, evaluation form results corroborate the evidence that technology can be a useful means of foreign language acquisition.

The primary purpose of pre-and post-test evaluation form was to collect participants' feedback on the difficulty level of pre-test tasks and similar tasks of a post-test and, furthermore, to compare learners' task performance before and after the use of the CityCompass application.

Evaluation form results indicate that a major view amongst those surveyed was that compared to their experience of a pre-test performance, it was easier to complete a post-test. This result may be explained by the participants' speaking practice with a Finnish native speaker during the CityCompass session of the experiment. This hypothesis is supported by the analysis of the answers to evaluation form's open questions.

Analysis of researcher's observational protocol suggests that, in comparison to results of a pre-test, the majority of participants performed better in a post-test. Observational protocol findings indicate that most of the participants needed less time to prepare for the completion of the post-test, made less or shorter pauses while speaking, used more extensive vocabulary and provided more detailed answers to the post-test questions.

Interviews' analysis reveals a prevailing view amongst the interviewees on the subject of media use in language learning. All interviewees support the idea of making use of media in a foreign language class and consider movies, TV shows, documentaries, short videos and images to be the most efficient media types for language learning and teaching. Interestingly, none of the interviewees mentioned virtual reality applications and other products of technological inheritance in the first place.

Returning to the research questions posed at the beginning of this study, it is now possible to state that computer-mediated communication can have a significant impact on learners' motivation and encouragement to be actively engaged in the learning process. The results of this investigation also show that computer-mediated communication has a positive effect on learners' target language speaking skills. Computer-mediated communication in language learning can be a useful tool for expanding learners' vocabulary and developing their language fluency.

Chapter Six, therefore, moves on to the discussion of the research findings.

5 EVALUATION OF THE STUDY

The initial aim of the study was to explore the effect of computer-mediated communication on such foreign language learners' skills, as speaking, writing, reading and listening. Due to a small sample size of the present research, it was not possible to examine the impact of computer-mediated communication on all elements of target language competence mentioned above.

Despite the importance of target language writing, reading and listening competence, the current study is limited to investing a possible effect of CMC only on the foreign language speaking skills. These limitations reveal evidence of the difficulty of collecting data on the impact that computer-assisted language learning can have on all components of language competence. Further data collection is required to determine what impact computer-mediated communication has on learner's writing, reading and listening skills.

Due to practical constraints, it was not possible to investigate the significant relationship between computer-mediated communication tasks and learners' anxiety. There is abundant room for further progress in determining the extent to which synchronous computer-mediated communication affects the level of learners' language anxiety. Therefore, more research on this topic needs to be undertaken before the association between learners' language anxiety and synchronous computer-mediated communication is more clearly understood.

Notwithstanding the fact that results obtained from interviews' analysis corroborate the findings of a great deal of the previous work on the role of motivation in foreign language learning, the generalisability of these results is subject to certain limitations.

The current study has been unable to provide a comprehensive review of the impact that synchronous computer-mediated communication may have on learners' language motivation. A further study with more focus on the synchronous computer-mediated communication tasks in language learning and their effect on the students' motivation level is therefore suggested.

In his major study on the research design John Creswell (2014) suggests several criteria to check for the accuracy and validity of the research findings, including validity, reliability, and generalizability.

Noble& Smith (2015) claim reliability, validity, and generalizability as the central concepts of quantitative research evaluation and draw our attention to the continuing discussions about the appropriateness of these concepts for qualitative research evaluation. This view is supported by Cresswell (2014; p.251), who highlights that validity 'does not carry the same connotations in qualitative research as it does in quantitative research.'

Lincoln & Guba (1985) suggest truth value, consistency or neutrality, and applicability as alternative criteria for qualitative research evaluation. According to Noble& Smith (2015), enhancing the truth value of qualitative research requires researcher's 'reflexivity and reflections on own perspectives' and 'representativeness of the findings.'

In the current study, the process of reflection was aided by the use of a reflective research diary, where all stages of data collection process and decisions were documented. Reflective journal enabled the researcher to carefully think about the research process, deepen the understanding of all research's facets and establish transparency of the study.

Another strategy employed to enhance the truth value of the present qualitative research was peer debriefing, which helped the researcher to take a critical look at the research process and 'to uncover taken for granted biases' (Noble& Smith, 2015). The representativeness of the research findings was enabled by means of audio recordings of the conducted interviews and audiovisual recordings of the participants' completion of CityCompass tasks. Those recordings were repeatedly used for checking the objectivity of the findings.

Noble& Smith (2015) associate the concept of consistency with the trustworthiness of the study, which can be enabled by providing clear descriptions of the research process

and transparency of researcher's decisions. In the present research, the transparency of research process is enhanced with the help of the detailed description of each cycle of current action research. Summary of all facets of the research is reported in Chapter Three.

Commenting on the evaluation of qualitative research reliability, some researchers argue that it 'requires researchers to make judgments about the research in relation to the application and appropriateness of the methods undertaken and the integrity of the final conclusions' (Noble& Smith, 2015). In the present qualitative research, an action research method was considered as the most appropriate due to a participatory nature of the study and its orientation to practice.

Application of action research is also explained by the characteristic for this research type active interaction between a researcher and a researched subject. In the current study, this interaction is presented in a practical experiment, which served as one of the data collection tools. All data of the current research were carefully analyzed and accurately reflected in the research findings. Findings of each data collection method are reported in Chapter Four.

Creswell (2014; p.251) suggests to 'triangulate different data sources' to assess the research validity. The present research employed that method by involving multiple types of data collection tools: a qualitative observation, interviews, qualitative documents, practical experiments with the implementation of qualitative audio and visual materials and questionnaires. The use of multiple data collection tools enabled the researcher to examine the evidence from different perspectives and add to the research's validity.

6 DISCUSSION

This chapter aims to provide a summary of research findings and to reflect on the connection between obtained results and a theoretical framework on the computer-mediated communication and media literacy. The chapter indicates limitations and prospects for future research.

In the context of the current case study, the impact of computer-mediated communication on Finnish language learners was examined. In present research computer-mediated communication was enabled through result-oriented collaborative tasks of the CityCompass application.

As mentioned in the literature review, the convergence of media and technology is perceived to enrich traditional classroom activities, and a significant number of educators have taken the challenge of introducing computer-mediated activities into traditional teaching methods. Following the present results, previous studies have suggested good prospects for further increasing the integrity of technology and foreign language teaching and learning. And while the benefits of blended learning are subject to continuous discussion, a clear need to modify traditional teaching approach, including a considerable modification of existing task types with regards to the peculiarities of modern technology.

Findings of the current research corroborate this idea and suggest that a significant part of the changes required is in charge of the field of media education. Taking into account the focus of media education on ‘pedagogic support to human relationships with media’ (Kotilainen, 2015), it can thus be suggested that truly effective computer-assisted language learning can be established with the teachers’ professional competence in media literacy in the first place.

Some authors have highlighted the considerable importance of language learners’ active involvement in result-oriented oral activities for the successful target language acquisition (Bruner, 1960, 1962; Gass, 2000). Consistent with the literature, our research found that after completion of result-oriented tasks of CityCompass application the majority of participants who took part in the research experiment

showed better performance in speaking activities of a post-test than in the previous identical tasks of a pre-test.

Despite the fact that most research on computer-mediated communication found evidence on the increased frequency of technology use for educational purposes, the present research findings revealed an unexpectedly poor experience of experiment's participants in technology use for language learning. It was hypothesized that participants with previous experience of foreign language acquisition would be more familiar with the use of technological inheritance for mastering target language.

Contrary to expectations, research findings indicated that with a few exceptions the majority of respondents rarely used technology as a means of foreign language acquisition. Of the thirteen participants, only three reported a high frequency of technology use in language learning. It is difficult to explain this result, but it might be related to the fact that participants mastered their second languages at the time when the concept of computer-assisted language learning wasn't common, and in the process of a new foreign language acquisition they tended to use familiar methods.

An implication of this is the possibility that by integrating technology into traditional classroom language teaching may increase learners' frequency of technology use for independent language learning.

Prior studies have noted the importance of task choice and complexity for the effective language learning (Wang & Winstead, 2016). The findings of the current study are consistent with a great deal of the previous work on synchronous computer-mediated communication (SCMC), that consider a possibility that due to its strict time limits SCMC may be daunting and inappropriate for a particular group of students (Abrams, 2003; Sotillo, 2000; Hwanf, 2008).

In the present study, a strict criterion for the selection of experiment's participants was used. To avoid creating participants' anxiety about the experiment's task completion, all candidates were required to have an adequate command of the Finnish language.

Despite a careful selection of participants, our findings indicate the case when the experience of synchronous computer-mediated communication enabled by means of CityCompass weakened student's confidence in Finnish speaking skills. This result may be explained by the fact that synchronous computer-mediated communication puts a time limit on thinking over the responses and requires participants to produce an immediate reaction to their partner's speech.

Moreover, findings of the present action research suggest that computer-mediated communication tasks may have an impact on learners' perception of task complexity. In this study, analysis of evaluation forms indicated that major view amongst the experiment's participants was that after completion of synchronous computer-mediated tasks of CityCompass, they perceived tasks of a post-test to be easier than similar tasks of a pre-test. However, with small sample size, caution must be applied, as the findings might not be extrapolated to all language students engaged in synchronous computer-mediated communication tasks.

A number of researchers have considered synchronous computer-mediated communication to be more useful for enriching students' vocabulary and asynchronous computer-mediated communication to be a useful tool for improving learners' syntactic accuracy (Abrams, 2003; Sotillo, 2000; Hwanf, 2008). Findings of several comparative studies indicate that learners engaged in synchronous computer-mediated communication tasks produced more meaning-focused language output, while asynchronous computer-mediated communication tasks increased learners' language accuracy (Abrams, 2003; Sotillo, 2000; Hwanf, 2008).

The results obtained in this study mirror those of the previous studies that have examined the effect of synchronous computer-mediated communication on the learners' vocabulary variety. Analysis of the research results confirmed that engagement in synchronous computer-mediated communication tasks of CityCompass application enabled learners to use wider vocabulary with a larger variety of expressions while performing oral tasks of a post-test.

Taken together, current research findings made it possible to answer the research question of the study and state that computer-mediated communication can have a significant impact on learners' encouragement to be actively engaged in the learning

process. The results of this investigation also show that computer-mediated communication has a positive effect on learners' target language speaking skills. Computer-mediated communication in language learning can be a useful tool for expanding learners' vocabulary and developing their language fluency.

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APPENDICES

Appendix 1 Background information form

Participant's identification code (experimenter fills): _____

Background information form

With this form, the background information for the experiment is collected. Received information will be used for the data analysis. The information is stored and managed anonymously.

Age ___ in years

Gender

[ ] female [ ] male

Occupation

[ ] Employee Field of work:

[ ] Student Major:

Have you ever used information technology (IT) (ex.: online applications, virtual worlds, virtual learning environments, etc) in foreign language learning?

[ ] use them frequently

[ ] use them seldom

[ ] no previous experience

If you have previous experience with IT in foreign language learning, specify what technologies you have used

_____

If you have previous experience with IT in foreign language learning, specify for what reason you have used it (e.g. participation in the experiments, studies, work, and others)

_____

How many languages do you speak? What languages?

_____

How long have you been studying Finnish language?

How do you evaluate your level of Finnish? (Your personal opinion)

You can find levels' criteria on the back side

[ ] A1 Beginner [ ] B1 Intermediate [ ] C1 Advanced

[ ] A2 Elementary [ ] B2 Upper Intermediate [ ] C2 Proficiency

Common reference levels

A 1	Breakthrough or beginner	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce themselves and others and can ask and answer questions about personal details such as where he/she lives, people they know and things they have. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.
A2	Waystage or elementary	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of their background, immediate environment and matters in areas of immediate need.
B1	Threshold or intermediate	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise while travelling in an area where the language is spoken. Can produce simple connected text on topics that are familiar or of personal interest.

		Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans.
B2	Vantage or upper intermediate	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in their field of specialization. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
C1	Effective operational proficiency or advanced	Can understand a wide range of demanding, longer clauses, and recognize implicit meaning. Can express ideas fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organizational patterns, connectors and cohesive devices.
C2	Mastery or proficiency	Can understand with ease virtually everything heard or read. Can summarize information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express themselves spontaneously, very fluently and precisely, differentiating finer shades of meaning even in the most complex situations.

Appendix 2 Consent form

Experiment on the usage of technology in Foreign Language Learning

UNIVERSITY OF TAMPERE

CONSENT TO RECORD AN EXPERIMENT

I would like to kindly ask you to participate in an experiment that is a part of my master thesis on the Usage of technology in foreign language learning. By participating in the experiment you will help me to evaluate the effectiveness of technology usage in foreign language learning.

You will be asked to use CityCompass application, follow guide's instructions, answer guide's questions and think out loud while performing the tasks. The language of communication will be Finnish. In addition, you will be asked to fill in questionnaires and take part in an interview about the use of the application.

The following data will be recorded: the computer screen and its events, the whole process of your completion of the tasks and audio. The materials recorded during the experiment will be used for the data analysis. The recordings will be deleted after the data analysis is finished.

The results of the experiment will be reported anonymously. A summary of the main results will be used in a practical part of my master thesis. Video recordings or participants' personal data will not be revealed.

The participation is voluntary and you may refuse to answer certain questions on the questionnaire and withdraw from the study at any time with no penalty.

If you have any questions, don't hesitate to ask me.

By signing this form, you will accept the above terms.

Date and place: _____

Participant: _____

Signature: _____

Researcher: _____

Signature: _____

Appendix 3 CityCompass evaluation form

Participant's identification code (experimenter fills):

_____

EVALUATION FORM: Experiment on the usage of technology in Foreign Language Learning

With this form, the final evaluation for the analysis is collected. Give your feedback on the practicing Finnish speaking with CityCompass application.

1. How can you evaluate the use of CityCompass application?

-4	-3	-2	-1	0	1	2	3	4
Bad				Neutral				Good

2. How can you evaluate the use of technology in foreign language learning in general?

-4	-3	-2	-1	0	1	2	3	4
Bad				Neutral				Good

3. How useful was CityCompass application for practicing 'wayfinding' vocabulary?

-4	-3	-2	-1	0	1	2	3	4
Useless				Neutral				Useful

4. How clear were the instructions on how to use the application?

-4	-3	-2	-1	0	1	2	3	4
Unclear				Neutral				Clear

5. How clear were the instructions of the guide?

-4	-3	-2	-1	0	1	2	3	4
Unclear				Neutral				Clear

6. How interesting was the use of application?

-4	-3	-2	-1	0	1	2	3	4
Boring				Neutral				Interesting

7. How difficult was to do the tasks of the application?

-4	-3	-2	-1	0	1	2	3	4
Easy				Neutral				Difficult

8. Would you like to use similar applications for the language learning in future?

-4	-3	-2	-1	0	1	2	3	4
No				Not sure				Yes

9. What is your feedback on the use of CityCompass application for language learning?

_____

_____

Appendix 4 Pre- and post-test evaluation form

EVALUATION FORM: Experiment on the usage of technology in Foreign Language Learning

With this form, the final evaluation for the analysis is collected. Give your feedback on the completion of the pre-test and post-test.

1. How difficult was a pre-test?

-4	-3	-2	-1	0	1	2	3	4
Easy				Neutral				Difficult

2. Was a post-test as difficult as a pre-test?

-4	-3	-2	-1	0	1	2	3	4
No								Yes
(Easier)				Neutral		(As difficult as a pre-test)		

3. How clear was the explanation of the task in the pre-test?

-4	-3	-2	-1	0	1	2	3	4
Unclear				Neutral				Clear

4. How clear was the explanation of the task in the post-test?

-4	-3	-2	-1	0	1	2	3	4
Unclear				Neutral				Clear

5. Is there any difference in the way you felt while doing a pre-test and post-test?

_____